Ackert Hall, Room 120
Wednesday, April 10, 2024
4:00 P.M.

Coffee and Cookies
Chalmers Hall, Room 168
3:45 P.M.

Biochemistry & Molecular Biophysics Seminar

NKG2D ligand expression on NK cells induces NKG2D-mediated cross-tolerization of cytokine signaling and reduces NK cell tumor immunity

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Studies support a role for natural killer (NK) cells in cancer control, making these cells attractive for immunotherapy. One method being tested to make effective NK cells is the ex vivo activation with interleukin (IL)-12, IL-15, and IL-18. We demonstrate that this induces NKG2D ligands on NK cells. By engaging NKG2D, this eliminates the ability of both mouse and human NK cells to control tumor growth in vivo and in vitro, respectively. NKG2D-NKG2D ligand interaction between mouse NK cells reduced NK proliferation and expression of CD25, tumor necrosis factor (TNF), interferon (IFN)-gamma and T-bet. NKG2D signaling induced between human NK cells similarly decreased IFN-gamma, but did not affect T-bet or CD25, and increased TNF. These data demonstrate that NKG2D signaling can cross-tolerize cytokine signaling and suggest that eliminating this signaling could be beneficial in NK cell adoptive therapy. Further, these results highlight a need to better delineate effects downstream of NKG2D signaling in human, rather than mouse, NK cells.